Integrated Optical Interface for Superconducting Circuits

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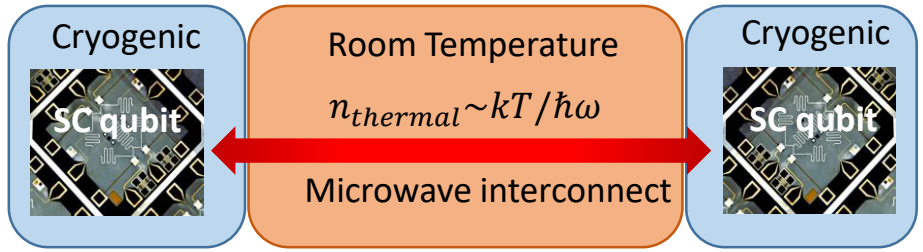
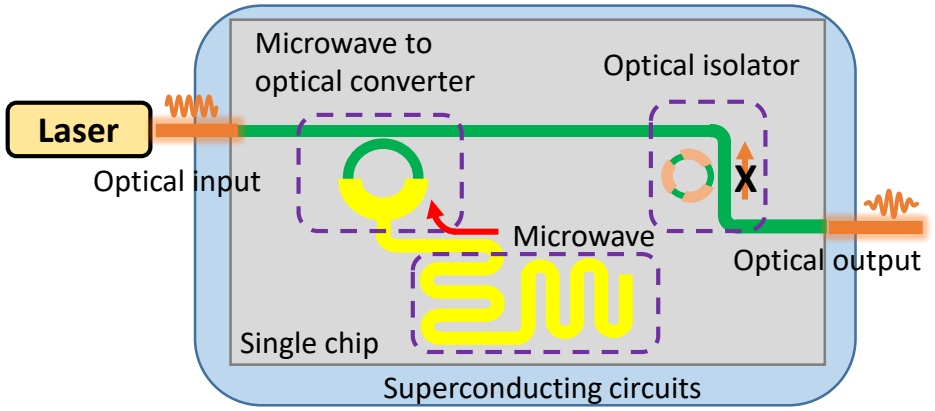
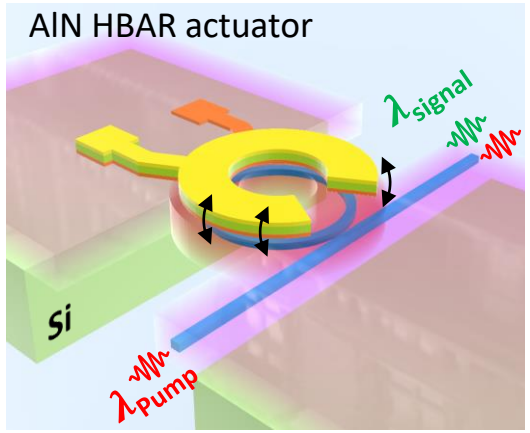
Motivation

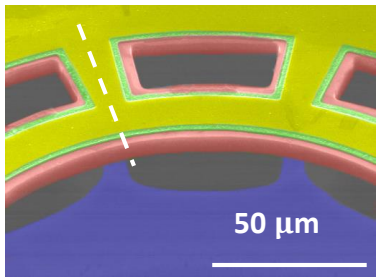


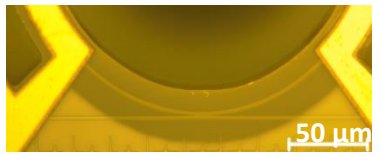
Large thermal noise, Large Ohmic loss

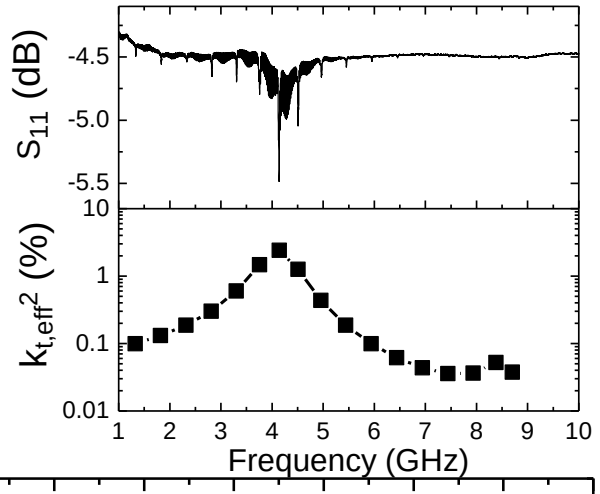


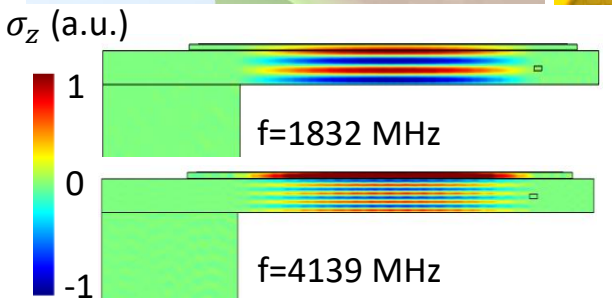
Microwave to optical converter

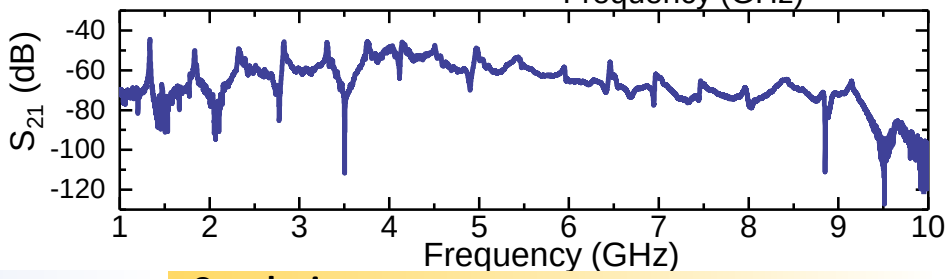




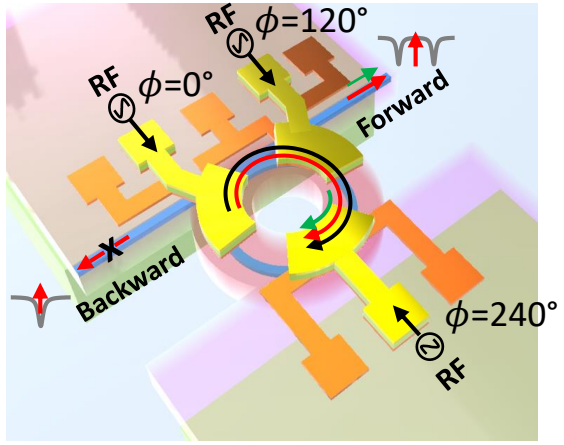


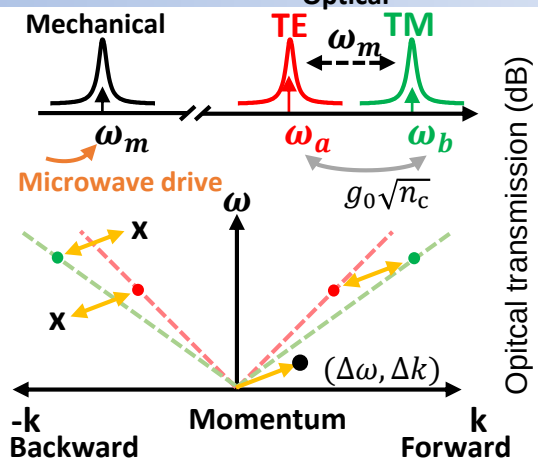


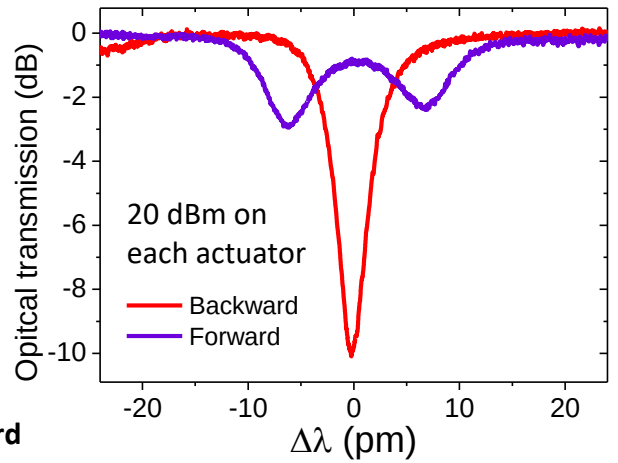




Optical isolator







Conclusion

1. The frequency converter and optical isolator shares the same materials and similar structures, making it possible for full integration.
2. Up to 9.2 GHz AOM is achieved, falling into microwave X-Band.
3. 10 dB optical isolation is achieved under 20 dBm RF pump power.

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